

REMARKS

Status of the Claims

- Claims 1, 3-7, 9-22, and 24-29 are pending in the Application.
- Claims 1-7 and 9-29 are rejected by Examiner.
- Claims 1, 3-7, 9, 13, 22, 24-25, and 28-29 are amended by Applicant.
- Claims 2 and 23 are cancelled by Applicant.

Claim Rejections Pursuant to 35 U.S.C. §102

Claims 1-7, 9, 11-19, 21-24 and 26-28 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application Publication No. 2003/0214506 to Koselj et al. Applicant respectfully traverses the rejection.

Koselj et al. discloses a hardware graphics engine that is sufficiently simple that it can be embedded in a display driver IC for a small-area display or in a display module for a portable electrical device. Since the graphics engine is in the display module, high-level graphics commands travel between the CPU and the display part of the mobile device, rather than pixel data. Use of graphics engines as opposed to non-accelerated CPU processing reduces power consumption. Use of the graphics engine in the display module allows considerable savings in power in a device of almost identical size and weight. (Koselj et al., paragraph 0020).

Amended Claim 1, which incorporates now cancelled Claim 2, recites:

A method for rendering graphics on a display device for a computer system having a central processing unit, system random access memory, and a graphics card, said graphics card comprising a graphical processing unit, video random access memory, and a frame buffer, said method comprising:

rendering a complex graphic in the system random access memory with the central processing unit; and

copying said complex graphic from the system random access memory directly into the frame buffer by the central processing unit, wherein copying directly into the frame buffer bypasses the graphical processing unit.

The Examiner rejected Claim 2 based on the teaching of Koselj et al. at paragraph 0004 which states:

More complex graphics processing places a heavy strain on the CPU and slows the device, so that display reaction and refresh rate may become unacceptable. (Koselj et al., paragraph 0004).

Applicant respectfully submits that this statement teaches away from the present invention because it tends to show that complex graphics processing becomes unacceptable when performed by the CPU. Amended Claim 1 recites that complex graphics are rendered by the CPU into system random access memory and copied directly into the frame buffer. Koselj et al. at paragraph 0004 thus teaches away from amended Claim 1.

Further, Koselj et al. teaches at paragraphs 0206-0208:

[0206] Generally there are two modes of operation of the interface circuit related to data flow:

[0207] Basic mode, which writes to display memory directly (via data interface logic) bypassing graphics acceleration, or

[0208] Accelerated mode, which sends high level commands to the graphics accelerator to interpret them.

Further, Koselj et al. teaches that the basic mode is limited to a few instances:

[0209] The basic mode (writing directly into display memory) may be used in the following cases:

[0210] During power-on, a low level initialization routine (executed by host CPU) may purge or initialize display memory in order to display low level (BIOS type) messages or to display logo or other graphic.

[0211] Despite the presence of graphics acceleration the host CPU may directly access display memory to use the circuitry in legacy compatible mode (as in the prior art). This mode can be used for compatibility reasons if necessary.

[0212] Host CPU may read-out the contents of the display memory in case it requires the information in order to perform a transformation on the image currently displayed.

However, Koselj et al. places a limitation on its basic mode. The basic mode is used only for simple graphics such as bitmaps, whereas the accelerated mode is used for complex graphics requiring high level commands. Specifically, Koselj et al. teaches:

[0213] *The basic mode use in the above cases is based on bitmap image data format. The second accelerated mode (b)) in which data in the form of high level*

commands, is sent to the graphics accelerator (via the command buffer/FIFO) is the mode which brings the key benefits described herein.

Applicant submits, that, as stated in paragraph 0213 above, Kosejl et al. derives a key benefit by sending *complex* graphics to the graphics accelerator and only simple graphics to the CPU. In distinction, Amended Claim 1 recites that a complex graphic is rendered in the system random access memory by the CPU and copied from the system random access memory directly into the frame buffer by the central processing unit, wherein copying directly into the frame buffer bypasses the graphical processing unit.

Thus, Applicant submits that Kosejl et al. actually teaches away from amended Claim 1 because Kosejl et al. specifically teaches sending complex graphics in the accelerated graphics mode and only sends simple bitmap graphics in the basic mode. Amended Claim 1 recites rendering complex graphics in random access memory with the CPU and copying the complex graphics directly into the frame buffer, thus bypassing the graphics processing unit.

Since Kosejl et al. does not teach rendering a complex graphic in the system random access memory with the central processing unit; and copying said complex graphic from the system random access memory directly into the frame buffer by the central processing unit, wherein copying directly into the frame buffer bypasses the graphical processing unit as recited in amended Claim 1, then Kosejl et al cannot anticipate amended Claim 1. Applicant respectfully traverses the 35 USC §102(e) rejection of Claim 1.

Applicant has cancelled Claim 2 and incorporated its content into amended Claim 1 to more clearly claim that which he regards as his invention. Claims 4-7 and 9 are amended to refer to amended Claim 1. Thus dependent Claims 3-7, and 9-12 also patentably define over the cited art.

Independent Claims 13, 22, and 28 are likewise amended to include a complex graphic and to more clearly recite that which Applicant regards as his invention. Applicant thus submits that dependent Claims 14-21, 24-27 and 29 which depend on amended independent Claims 13, 22 and 28 respectively also patentably define over the cited art.

Applicant respectfully requests withdrawal of the 35 USC §102(e) rejection of Claims 1-7, 9, 11-19, 21-24 and 26-28 as these patentably define over the cited art as discussed above.

Claim Rejections Pursuant to 35 U.S.C. §103

Claims 10, 20, 25 and 29 stand rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent Application Publication No. 2003/0214506 to Koselj et al. in view of U.S. Patent Application Publication No. 2002/0196256 to Hoppe et al. Applicant respectfully traverses the rejection.

Applicant notes that Claims 10, 20, 25 and 29 depend on amended Claims 1, 13, 23 and 28 respectively. Claims 1, 13, 23, and 28 patentably define over Koselj et al. as stated above.

Koselj et al. teaches a display driver integrated circuit including a hardware-implemented graphics engine that teaches away from amended independent Claims 1, 13, 23 and 28 as discussed above.

Hoppe et al. teaches a system and method to effect the reduction of aliasing artifacts along discontinuity edges of a rendered polygon mesh by overdrawing the edges as antialiased lines. The processes of Hoppe et al. are targeted to be effective at reducing the temporal artifact known as "crawling jaggies". (Hoppe et al., Abstract)

Applicant submits that neither Koselj et al. nor Hoppe et al., either considered individually or in combination, do not teach rendering a complex graphic in the system random access memory with the central processing unit; and copying said complex graphic from the system random access memory directly into the frame buffer by the central processing unit, wherein copying directly into the frame buffer bypasses the graphical processing unit.

Further, Applicant notes that Koselj et al. teaches away from the current invention as stated above with respect to amended Claims 1, 13, 23, and 28. As a result, Hoppe et al. cannot be combined with Koselj et al. to teach all of the elements of independent amended Claims 1, 13, 23, and 28 upon which Claims 10, 20, 25 and 29 depend.

Thus the combination of Koselj et al. and Hoppe et al. cannot render obvious Claims 10, 20, 25 and 29. Applicant respectfully requests withdrawal of the §103(a) rejection.

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PATENT

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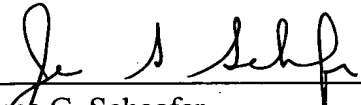
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Conclusion

In view of the above amendments and remarks, Applicant submits that the present application is in a condition for allowance upon entry of the amendments herein. Applicant respectfully and earnestly solicits a Notice of Allowance for all pending claims.

Respectfully submitted,

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